DATE.	YEAR.	FEET.	INCHES.
1873	December 18th	44	5
1874	January 11th	47	11
1875	August 6th	55	4
1876	January 29th	51	9
1877	January 26th	53	9
1878	December 15th	41	4
1879	December 27th	42	9
1880	February 17th	53	2
1881	February 16th	50	7
1882	February 20th, 6 a. m.	54	1
1882	February 20th, 11.30 a. m.	54	11
1882	February 20th, 12.40 p. m.	55	7
1882	February 20th, 2.50 p. m.	55	10
1882	February 20th, 5.30 p. m.	56	3
1882	Februrp 20th, 7 p. m	56	6
1882	February 21st, 8 a. m.	58	6

TEMPERATURE OF WATER.

The temperature of water as observed in rivers and harbors at Signal Service stations, with the average depth at which observations were taken, is given in the table on the right hand of chart ii. Observations on temperature of water were not taken at the following-named stations, on the dates given, on account of ice in harbors: Escanaba, first to eighth, inclusive; Marquette, first to sixth; Duluth, first to twenty-seventh.

In the first column of the table is given the maximum temperature observed during the month; and in the second column the minimum temperature observed during the month. It will be seen that the greatest range of water temperature occurred at the west Gulf stations, where it ranged from 18°.4 at Indianola to 19° at Galveston. At the stations on the eastern Gulf the smallest ranges in water temperature were reported.

The following table gives the highest and lowest temperature of water observed at the several stations, with the range of water temperature, mean temperature of the air at the station, and the depth of water at which the observations were taken:

Temperature of Water for April, 1882.

	Temperature at bottom.		Range.	Average depth in feet and inches.	Mean temperature of the air at station.
	Max.	Min			
	°	°	°	ft. in.	°
Atlantic City	53.3	45.	8.3	5 0	46.8
Alpena	44.	31.	13.0	12 0	36.7
Augusta	74.6	63.5	11.1	8 9	66.6
Baltimore	54.5	47.5	7.0	9 8	52.0
Boston	45.6	39.5	6.1	25 0	42.0
Buffalo	49.9	38.6	11.3	10 0	40.8
Burlington	38.3	34.	4.3	19 5	38.7
Cedar Keys	79.	71.	8.0	8 7	73.4
Charleston	45.	35.	10.0	40 8	66.6
Chicago	49.9	42.1	7.8	7 9	45.8
Chincoteague	59.	43.	16.0	6 4	48.9
Cleveland	50.	40.4	9.6	14 0	44.4
Detroit	46.	37.	9.0	24 2	45.9
Duluth	36.	34.5	1.5	13 3	37.5
Eastport	37.3	33.3	4.0	16 2	35.0
Escanaba	44.	33.	11.0	15 0	36.6
Galveston	77.	58.	19.0	14 9	72.5
Grand Haven	49.	30.5	18.5	19 0	43.6
Indianola	79.	60.6	18.4	9 3	73.1
Jacksonville	70.	71.	5.0	18 0	70.9
Key West	85.	73.5	11.5	17 2	78.5
Marquette	38.9	31.8	7.1	10 7	36.5
Milwaukee	47.1	39.6	7.5	8 0	42.8
Mobile	70.3	65.	5.3	16 0	70.5
New Haven	51.2	39.7	11.5	14 9	43.5
New London	46.	40.	6.0	12 11	44.7
Newport	46.	38.5	7.5	10 9	43.1
New York	49.3	41.3	8.0	22 2	46.1
New Shoreham	46.1	39.3	7.7	9 4	43.2
Norfolk	61.	54.	7.0	16 10	55.7
Pensacola	73.5	66.7	6.8	18 0	70.4
Portland, Me	42.	34.	8.0	19 2	43.3
Portland, Oreg	52.3	43.2	9.1	72 11	48.5
Port Eads	68.	64.	4.0	9 10	72.7
Provincetown	47.5	38.5	9.0	14 0	41.7
Punta Rassa	85.5	72.6	12.9	11 9	75.3
Sandusky	52.1	39.8	12.3	10 1	46.2
Sandy Hook	48.9	42.5	6.4	2 1	46.8
San Francisco	54.6	53.3	1.3	29 0	52.4
Savannah	71.4	64.9	6.5	13 4	68.0
Smithville	72.0	61.0	11.0	10 0	62.2
Toledo	55.	42.	13.0	11 9	46.5
Wilmington	69.5	61.5	8.0	13 0	63.2

ATMOSPHERIC ELECTRICITY.

AURORAS.

Auroral displays were of unusual frequency during the month. The display which began on the evening of the 16th was the most extraodinary that has occurred for many years, and was visible at a great number of stations throughout the United States. It was observed as far south as Key West, at stations in the Gulf states, in southern Texas, New Mexico, and California and by numerous steamships and vessels. On vessels in the north Atlantic, during the display, the magnetic needle deviated north and south of its true position; and long telegraphic circuits, extending north and south, east and west, in the United States were worked without the aid of battery. The following extract from a communication, published in "Nature," from Mr. A. G. Whipple, an English scientist, shows that its influence was also felt in England:

"It may interest some of your readers to know that a magnestic storm of unusual intensity raged from about midnight of Sunday, the 16th, to midnight of the 17th. We observe a tremendous spot which appeared on the sun's disc, first on the 13th, is now rapidly approaching the central meridian, and a group observed on Saturday a little in advance of it, appears to have undergone considerable change in the interval.

(Signed.) G. M. WHIPPLE,
Kew Observatory, Richmond, Surrey.
April 18th, 1882."

Eastport, Maine, 16th, a faint diffuse auroral light appeared in the north at 8 p. m. It gradually rose toward the zenith, increasing in brilliancy. At 8.30 p. m. a striated arc extending from northwest to northeast, with a breadth of 15° and altitude of 45°. At 8.40 p. m. the arc dissolved into numerous beams, all parallel to each other and pointing toward the zenith. At 9 p. m. the whole northern sky from west to east was filled with beams, some of which were of blood red and others of light red color. It continued to extend southward and at eleven p. m. reached the zenith, forming a half crown. At eleven thirty p. m., the whole sky was filled with beams, all pointing toward the zenith, forming a perfect corona, and some of the beams reaching within 10° of the southern horizon. At 11.40 p. m. the aurora became slightly obscured by cirrus clouds. At midnight it was still visible, though rapidly fading. Telegraphic communication was seriously interrupted by its influence.

Washington, District of Columbia, 16th, an aurora was visible at 9.54 p m., in the form of an arc, 2° in width and about 6° above the northern horizon; the base of the dark segment measuring about 35°. At 11 p. m., the arc was quite brilliant and of increased dimensions; the pale green light which had been formerly observed had then become quite strong; the summit of the arch had reached an altitude of 12°, the arch itself being fully 8° in width, while the base of the segment measured about 55°. At 11 p. m., a few faint streamers projected not more than 3° above and from the corona of the arch. At eleven post-meridian, the summit of the arch reached an altitude of 20° and extended from 100° to 250° azimuth; brilliant streamers, narrow and pointed at the ends, shot upward to the zenith from the whole length of the arch; the upward motion was very rapid, and resembled flashes of lightning. The streamers gradually diminished in length and brilliancy after midnight, and at 12.40 a. m. of seventeenth no motion was perceptible. At 12.45 a. m. the arch was faintly defined and without streamers. At 1.00 a. m. the arch was again well defined and of brighter color. At one-thirty the aurora revived, but did not equal its former brilliancy; the crown of the arch had an elevation of about 10°, without any change in its azimuth; broad streamers flashed upward at short intervals, some extending nearly to zenith. At 2 a. m. the streamers subsided, and at 2.12 a. m. the arch broke up into faint bands of light. At two-twenty-five only a faint light remained in the northern sky. At